CONTENTS OF VOLUME 207

No. 1, March, 1954

PAGE

Lowry, Oliver H., Roberts, Nira R., Leiner, Katherine Y., Wu, Mei-Ling, and Farr, A. Lewis. The quantitative histochemistry of brain. I. Chemical methods 1

Lowry, Oliver H., Roberts, Nira R., Wu, Mei-Ling, Hixon, Walter S., and Crawford, Elizabeth J. The quantitative histochemistry of brain. II. Enzyme measurements 19

Lowry, Oliver H., Roberts, Nira R., Leiner, Katherine Y., Wu, Mei-Ling, Farr, A. Lewis, and Albers, R. Wayne. The quantitative histochemistry of brain. III. Ammon's horn 39

Purko, M., Nelson, W. O., and Wood, W. A. The rôle of *p*-aminobenzoate in pantoate synthesis by *Bacterium linens* 51

Tong, W., Taurog, Alvin, and Chaikoff, I. L. The metabolism of I^{131}-labeled diiodotyrosine 59

Piez, K. A. The separation of the diastereoisomers of isoleucine and hydroxylysine by ion exchange chromatography 77

McQuillen, Kenneth, and Roberts, Richard B. The utilization of acetate for synthesis in *Escherichia coli* 81

Lavine, Theodore F., and Floyd, Norman F. The decomposition of methionine in sulfuric acid 97

Lavine, Theodore F., Floyd, Norman F., and Cammaroti, Mary S. The formation of sulfonium salts from alcohols and methionine in sulfuric acid .. 107

Floyd, Norman F., and Lavine, Theodore F. Isolation of methionine from protein hydrolysates as the methylsulfonium salt 119

Wakil, Salih J., and Mahler, H. R. Studies on the fatty acid oxidizing system of animal tissues. V. Unsaturated fatty acyl coenzyme A hydrase 125

Frieden, Edward H., and Martin, Alloys S. Uptake of glycine-1-C^{14} by connective tissue. I. Effects of estrogen and relaxin 133

Pitney, W. R., Beard, Marion F., and Van Loon, E. J. Observations on the bound form of vitamin B_{12} in human serum 143

Kennedy, Eugene P., and Smith, Sylvia Wagner. The isolation of radioactive phosphoserine from "phosphoprotein" of the Ehrlich ascites tumor .. 153

Gertler, Menard M., Kream, Jacob, and Baturay, Omar. Studies on the phosphatide content of human serum 165

Fønss-Bech, Peter, and Li, Choh Hao. Zone electrophoresis of hypophyseal growth hormone (somatotropin) on starch 175

Dziewiatkowski, Dominic D. Utilization of sulfate sulfur in the rat for the synthesis of cystine 181

Feigelson, Philip, and Conte, Frank P. Studies on adaptive enzyme formation in mammals. I. Galactose metabolism 187

Lanning, Mary C., and Cohen, Seymour S. The mechanism of ribose formation in *Escherichia coli* 193

Anfinsen, Christian B., Redfield, Robert R., Choate, Warren L., Page, Juanita, and Carroll, William R. Studies on the gross structure, cross-linkages, and terminal sequences in ribonuclease 201

Hofstee, B. H. J. Specificity of esterases. III. Critical concentrations of the substrate 211

XUM

HOFSTEE, B. H. J. Specificity of esterases. IV. Behavior of horse liver esterase towards a homologous series of *n*-fatty acid esters 219
HAYES, JOSEPH E., JR., and VELICK, SIDNEY F. Yeast alcohol dehydrogenase: molecular weight, coenzyme binding, and reaction equilibria 225
FRIEDKIN, MORRIS, and ROBERTS, DEWAYNE. The enzymatic synthesis of nucleosides. I. Thymidine phosphorylase in mammalian tissue 245
FRIEDKIN, MORRIS, and ROBERTS, DEWAYNE. The enzymatic synthesis of nucleosides. II. Thymidine and related pyrimidine nucleosides 257
ORY, ROBERT L., HOOD, DONALD W., and LYMAN, CARL M. The rôle of glutamine in the synthesis of arginine by *Lactobacillus arabinosus* 267
VICKERY, HUBERT BRADFORD, and PALMER, JAMES K. The metabolism of the organic acids of tobacco leaves. VII. Effect of culture of excised leaves in solutions of (+)-tartrate 275
HYDE, PAUL M., ELLIOTT, WILLIAM H., DOISY, E. A., JR., and DOISY, EDWARD A. Synthesis and metabolic studies of 17α-methyl-C^{14}-Δ^5-androstene-3β,17β-diol. 287
EICH, STEPHEN, and CERECEDO, LEOPOLD R. Studies on thiamine analogues. III. Effects on enzyme systems 295
PLAUT, G. W. E., and SUNG, SHAN-CHING. Diphosphopyridine nucleotide isocitric dehydrogenase from animal tissues 305
KATZENELLENBOGEN, ESTELLA R., DOBRINER, KONRAD, and KRITCHEVSKY, THEODORE H. Separation of steroid hormones and their metabolites by partition type chromatography 315
SALAMON, IVAN I., and DOBRINER, KONRAD. 3β,6α-Dihydroxyallopregnane-20-one from human urine 323
STETTEN, MARJORIE R., and STETTEN, DEWITT, JR. A study of the nature of glycogen regeneration in the intact animal 331
NICHOLAS, D. J. D., NASON, ALVIN, and MCELROY, WILLIAM D. Molybdenum and nitrate reductase. I. Effect of molybdenum deficiency on the *Neurospora* enzyme 341
NICHOLAS, D. J. D., and NASON, ALVIN. Molybdenum and nitrate reductase. II. Molybdenum as a constituent of nitrate reductase 353
KUFF, EDWARD L. The distribution of fumarase activity in mouse liver homogenates 361
DANCIS, JOSEPH, and BALIS, M. EARL. The reutilization of nucleic acid catabolites 367
UNGAR, FRANK, DAVIS, JOHN W., ROSENKRANTZ, HARRIS, and DORFMAN, RALPH I. The metabolism of pregnane-17α,21-diol-3,20-dione and pregnane-17α,21-diol-3,11,20-trione *in vivo* 375
BEATON, J. R., BEARE, J. L., BEATON, G. H., CALDWELL, E. F., OZAWA, G., and MCHENRY, E. W. Studies on vitamin B$_6$. V. Chronological sequence of biochemical defects in the vitamin B$_6$-deprived rat 385
HORECKER, B. L., GIBBS, MARTIN, KLENOW, HANS, and SMYRNIOTIS, P. Z. The mechanism of pentose phosphate conversion to hexose monophosphate. I. With a liver enzyme preparation 393
DAOUST, R., BERTALANFFY, F. D., and LEBLOND, C. P. The rates of desoxyribonucleic acid synthesis and mitosis in lung 405
VOLCANI, BENJAMIN E., SICHER, SARAH, BERGMANN, ERNST D., and BENDAS, HILLEL. Action of some substituted anthranilic acids on *Escherichia coli* .. 411
OESPER, PETER. The mechanism of action of glyceraldehyde-3-phosphate dehydrogenase 421

HUFFMAN, MAX N., and LOTT, MARY HARRIET. 16-Substituted steroids. IX. Androstan-3β-ol-16-one (Heard's ketone) 431
WEED, LAWRENCE L., and WILSON, D. WRIGHT. Studies on precursors of pyrimidines of nucleic acid 439
CUNNINGHAM, LEON W., JR. Reactivation of diethyl *p*-nitrophenyl phosphate-inhibited α-chymotrypsin by hydroxylamine 443
ELWYN, DAVID, and SPRINSON, DAVID B. Certain interrelationships in the metabolism of glycine and serine 459
ELWYN, DAVID, and SPRINSON, DAVID B. The synthesis of thymine and purines from serine and glycine in the rat 467

No. 2, APRIL, 1954

CLARK-LEWIS, J. W., and FRUTON, JOSEPH S. Action of proteinases on γ-glutamylamino acid amides and carbonylbisamino acid amides 477
DURELL, JACK, and FRUTON, JOSEPH S. Proteinase-catalyzed transamidation and its efficiency 487
SMITH, EMIL L., and STOCKELL, ANNE. Amino acid composition of crystalline carboxypeptidase 501
KIMMEL, J. R., and SMITH, EMIL L. Crystalline papain. I. Preparation, specificity, and activation 515
SMITH, EMIL L., KIMMEL, J. R., and BROWN, DOUGLAS M. Crystalline papain. II. Physical studies; the mercury complex 533
SMITH, EMIL L., STOCKELL, ANNE, and KIMMEL, J. R. Crystalline papain. III. Amino acid composition 551
THOMPSON, E. O. P. Crystalline papain. IV. Free amino groups and N-terminal sequence 563
WELLS, IBERT C. Oxidation of choline-like substances by rat liver preparations. Inhibitors of choline oxidase 575
SPRINSON, DAVID B., and COULON, ANDRÉE. The precursors of sphingosine in brain tissue 585
BOVARNICK, MAX, EISENBERG, FRANK, JR., O'CONNELL, DANIEL, VICTOR, JOSEPH, and OWADES, PHYLLIS. Preparation, determination, and excretion of glutamyl polypeptide and its polymers 593
SHEPHERD, JAMES A., and KALNITSKY, GEORGE. Intracellular distribution of fumarase, aconitase, and isocitric dehydrogenase in rabbit cerebral cortex .. 605
ANDERSON, DAVID G., and VENNESLAND, BIRGIT. The occurrence of di- and triphosphopyridine nucleotides in green leaves 613
STAFFORD, HELEN A., MAGALDI, ANNA, and VENNESLAND, BIRGIT. The enzymatic reduction of hydroxypyruvic acid to D-glyceric acid in higher plants .. 621
WAKIL, SALIH J., GREEN, D. E., MII, S., and MAHLER, H. R. Studies on the fatty acid oxidizing system of animal tissues. VI. β-Hydroxyacyl coenzyme A dehydrogenase 631
PACKHAM, MARIAN A., and BUTLER, G. C. The fate of injected sodium glucuronate and glucurone in the rat 639
EICHEL, HERBERT J. A spectrophotometric method for the determination of choline dehydrogenase 647
JAKOBY, WILLIAM B. Kynurenine formamidase from *Neurospora* 657
SCHOTZ, MICHAEL C., RICE, LESLIE I., and ALFIN-SLATER, ROSLYN B. The investigation of a cholesterol esterase in rat liver 665

WITTER, ROBERT F., COTTONE, MARY A., and STOTZ, ELMER. Formation of acetoacetate from fatty acids by particulate systems of rat liver 671
BURNS, J. J., MOSBACH, E. H., and SCHULENBERG, SHIRLEY. Ascorbic acid synthesis in normal and drug-treated rats, studied with L-ascorbic-1-C^{14} acid 679
GIBBS, MARTIN, and DEMOSS, R. D. Anaerobic dissimilation of C^{14}-labeled glucose and fructose by *Pseudomonas lindneri* 689
MILLS, GORDON C., and WOOD, JOHN L. Total mercapturic acid synthesis by liver and kidney 695
ROSE, IRWIN A., and CARTER, C. E. Pyrimidine precursors for *Lactobacillus bulgaricus* 09 701
FRISELL, WILHELM R., MEECH, LLOYD A., and MACKENZIE, COSMO G. A simplified photometric analysis for serine and formaldehyde 709
WOERNLEY, DONALD L. A magnetochemical investigation of nucleic acid constituents 717
NICHOL, CHARLES A. Studies of the mechanism of resistance to folic acid analogues in a strain of *Streptococcus faecalis* 725
STRAUS, WERNER. Colorimetric microdetermination of cytochrome *c* oxidase .. 733
STRAUS, WERNER. Isolation and biochemical properties of droplets from the cells of rat kidney 745
TABACHNICK, IRVING I. A., and BONNYCASTLE, DESMOND D. The effect of thyroxine on the coenzyme A content of some tissues 757
LEVINTOW, LEON, and NOVELLI, G. DAVID. The synthesis of coenzyme A from pantetheine: preparation and properties of pantetheine kinase 761
HOAGLAND, M. B., and NOVELLI, G. DAVID. Biosynthesis of coenzyme A from phosphopantetheine and of pantetheine from pantothenate 767
WU, CHUNG. Metabolism of free amino acids in fasted and zein-fed rats 775
UTTER, M. F., and KURAHASHI, K. Purification of oxalacetic carboxylase from chicken liver 787
UTTER, M. F., KURAHASHI, K., and ROSE, IRWIN A. Some properties of oxalacetic carboxylase 803
UTTER, M. F., and KURAHASHI, K. Mechanism of action of oxalacetic carboxylase 821
WAINFAN, ELSIE, HENKIN, GINETTE, RITTENBERG, SYDNEY C., and MARX, WALTER. Metabolism of cholesterol by intestinal bacteria *in vitro* 843
KRING, JEAN P., and WILLIAMS, J. N., JR. Differential determination of pyridine nucleotides and N^1-methylniacinamide in blood 851
HARTING, JANE, and VELICK, SIDNEY F. Acetyl phosphate formation catalyzed by glyceraldehyde-3-phosphate dehydrogenase 857
HARTING, JANE, and VELICK, SIDNEY F. Transfer reactions of acetyl phosphate catalyzed by glyceraldehyde-3-phosphate dehydrogenase 867
HANAHAN, DONALD J. The site of action of lecithinase A on lecithin 879
PUTMAN, E. W., and HASSID, W. Z. Sugar transformation in leaves of *Canna indica*. I. Synthesis and inversion of sucrose 885
STRICKLAND, R. D., MARTIN, E. L., and RIEBSOMER, J. L. A method for the independent determination of cysteine and cystine in proteins 903
LIEBERMAN, IRVING, and KORNBERG, ARTHUR. Enzymatic synthesis and breakdown of a pyrimidine, orotic acid. II. Dihydroorotic acid, ureidosuccinic acid, and 5-carboxymethylhydantoin 911
HAYNES, ROBERT, SAVARD, KENNETH, and DORFMAN, RALPH I. The action of adrenocorticotropic hormone on beef adrenal slices 925
INDEX TO VOLUME 207 939

of
671
d
679
l
689
695
701
709
717
725
733
745
757
761
767
775
87
03
21
3
1
7
9

XUM